Intel® E7500 Chipset

Stable Technology for Today's Business Solutions

The Power of MACROPROCESSING

Platform Overview

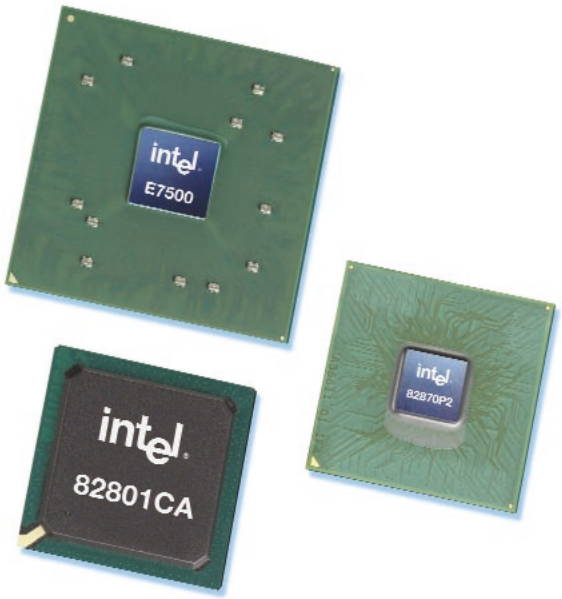
The Intel® E7500 chipset represents the next step in Intel® server chipset technology. The first in a family of volume chipsets, the Intel E7500 chipset supports dual processor server platforms optimized for the Intel® Xeon™ processor with 512 KB L2 cache and Intel® NetBurst™ microarchitecture. The Intel E7500 chipset design delivers maximized system bus, memory, and I/O bandwidth to enhance performance, scalability, and end-user productivity while providing a smooth transition to the next-generation server technologies.

Benefits of Advanced Technology and I/O Flexibility

The Intel E7500 chipset utilizes a modular design and offers platform implementation flexibility to meet the expanding needs of dual processor (DP) servers through three core components:

The E7500 Memory Controller Hub (MCH) is the central hub for all data passing through core system elements such as the dual Intel Xeon processors with 512 KB L2 cache via the system bus interface, the memory via memory interface, and both the 64-bit PCI/PCI-X and I/O controller hubs via Intel® Hub Interfaces. The Intel E7500 chipset delivers compelling performance at 3.2 GB/s of bandwidth across the 400 MHz system bus and up to 3.2 GB/s of bandwidth across two high-performance Double Data Rate SDRAM memory channels. To balance the performance offered by the processor and memory interfaces, the MCH allows several high-bandwidth I/O configuration options for a total of 3.2 GB/s of I/O bandwidth. Together, these features deliver balanced, high-throughput system performance for dual processor server platforms.

The 82870P2 64-bit PCI/PCI-X Controller Hub 2 (P64H2) connects to the MCH through a point-to-point Hub Interface 2.0 connection. Up to three P64H2 devices can be attached to the MCH, each providing an I/O bandwidth greater than 1 GB/s for a total of 3.2 GB/s of I/O bandwidth. Each P64H2 contains two independent 64-bit PCI-X interfaces and two PCI hot plug controllers, one per PCI-X interface. Each 64-bit PCI-X segment supports multiple PCI-X slots for high-bandwidth connectivity of next-generation components such as Intel® Gigabit Ethernet adapters and Intel® I/O processors.



CORE COMPONENTS

SCALEABLE COMPONENT FOR I/O BANDWIDTH

The 82801CA I/O Controller Hub 3-S (ICH3-S) connects to the MCH through a point-to-point Hub Interface 1.5 connection. The ICH3-S provides legacy I/O interfaces through integrated features including a two-channel Ultra ATA/100 bus master IDE controller and three USB controllers for up to six USB ports. The ICH3-S also offers an integrated System Manageability Bus 2.0 (SMBus 2.0) controller, an integrated LAN controller, as well as AC97 2.2-compliant and PCI 2.2-compliant interfaces.

Features that Maximize Performance and Balance the Platform

- Dual Intel Xeon processors with 512 KB L2 cache and a 400 MHz system bus provide up to 3.2 GB/s of available bandwidth.
- Dual DDR-200 memory channels operate in lock-step to provide up to 3.2 GB/s of memory bandwidth.
- Three Hub Interface 2.0 connections provide multiple high-bandwidth I/O configuration options, yielding up to 3.2 GB/s of I/O bandwidth.

Features	Benefits
■ Supports two Intel® Xeon™ processors with 512 KB L2 cache for dual-processing server platforms	■ Delivers a platform that brings Intel® NetBurst™ microarchitecture and Hyper-Threading Technology of the Intel Xeon processor to deliver best-in-class performance for peak server workloads.
■ 400 MHz system bus capability	■ Supports a high-performance, balanced platform by enabling a 3.2 GB/s system bus bandwidth that can support greater memory and I/O bandwidths.
■ Intel® Hub Architecture 2.0 connection to the MCH	■ This point-to-point connection between the MCH and the three P64H2 devices provides greater than 1 GB/s of bandwidth. ECC protection, coupled with high data transfer rates, supports I/O segments with greater reliability and faster access to high-speed networks.
■ 64-bit PCI/PCI-X Controller Hub-2	■ Introduces next-generation PCI/PCI-X performance and significantly enhances platform flexibility. Two independent 64-bit, 133 MHz PCI-X segments and two hot-plug controllers (one per segment) for each P64H2 allow up to six PCI-X buses per system.
■ Dual-channel DDR-200 memory interface	■ Offers a maximum memory bandwidth of 3.2 GB/s through a 144-bit wide, 200 MHz Double Data Rate SDRAM memory interface with densities up to 512 megabits.
■ Advanced Platform RASUM	■ Features such as memory ECC with Chipkill*, hardware memory scrubbing, MCH SMBus target interface, hub interface ECC, and the availability of enhanced error status information maintained through reset yield a more reliable platform.

Products	Package
■ E7500 Memory Controller Hub (MCH)	■ 1005 Flip Chip-Ball Grid Array (FC-BGA)
■ 82801CA Integrated Controller Hub (ICH3-S)	■ 421 Ball Grid Array (BGA)
■ 82870P2 64-bit PCI/PCI-X Controller (P64H2)	■ 567 Flip Chip-Ball Grid Array (FC-BGA)

Intel Access

Products Web Site	http://www.intel.com/products/server
Intel® Chipsets Home Page	http://www.intel.com/products/server/chipsets
Intel® Xeon™ Processor with 512 KB L2 Cache	http://developer.intel.com//design/xeon
Intel® Gigabit Ethernet Controllers	http://developer.intel.com/design/network/products/ethernet/index.htm
Intel® I/O Processor	http://developer.intel.com/design/network/products/ioprocessors/index.htm
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

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